

**Argosarchus horridus**, White (1846).

*A. spiniger*, White, ♂; *B. filiformis*, Colenso, ♂; *B. gerhardii*, Kaup, ♀.

This well-known species was represented in the collection from the Great Barrier Island by one male and one female, which have the following dimensions: Length of the body, ♀ 128 mm., ♂ 95 mm.; of mesothorax, ♀ 28 mm., ♂ 21 mm.; of metathorax, ♀ 25 mm., ♂ 19 mm.; of abdomen, ♀ 64 mm., ♂ 49 mm.; of antennæ, ♀ 29 mm., ♂ 29 mm.; of anterior femur, ♀ 36 mm., ♂ 24 mm.; of middle femur, ♀ 26 mm., ♂ 20 mm.; of posterior femur, ♀ 26 mm., ♂ 19 mm. The bases of all the femora are pale in colour, more broadly so in the male than in the female.

It is found throughout New Zealand, as far south as the West Coast Sounds of Otago.

ART. VI.—New Zealand Polyplacophora: Keys to Genera and Species.

By HENRY SUTER.

[Read before the Philosophical Institute of Canterbury, 2nd November, 1898.]

KEY TO GENERA.

- A. Valves lacking insertion plates . . . . . *Lepidopleurus*.
- AA. Valves possessing insertion plates, valves i.–vii. or i.–viii. having slits; teeth smooth or but slightly roughened between the slits, never closely, finely pectinated; valves lacking eyes.
- B. Surface of intermediate valves divided into lateral and central areas by a diagonal (often indistinct) extending from beak to outer front angle of tegmentum; or, if this is not clearly the case, the posterior valve has an even, crescentic series of well-developed teeth; all valves having slits.
- C. Posterior valve having a crescentic series of well-developed teeth.
- D. Valves porous at the eaves. Sutural plates connected across the sinus, side-slits several (single in one species), girdle with compact diamond-patterned covering; gills as long as the foot . . . . . *Callochiton*.
- DD. Valves solid at eaves, girdle densely covered with flat imbricating scales, side-slits single . . . . . *Ischnochiton*.

- CC. Posterior valve having a sinus behind, without slits; girdle hairy or nude, never scaly .. .. . *Plaxiphora.*
- BB. Surface of intermediate valves divided into a narrow dorsal area and latero-pleural areas, the latter formed by the union of the lateral and the pleural areas; valves more or less covered by the naked spiculose or hairy (never scaly) girdle.
- C. Girdle provided with pores bearing tufts of bristles .. .. . *Acanthochites.*
- CC. Girdle spongy, produced forward .. .. . *Spongiochiton.*
- AAA. All valves or valves i. to vii. possessing insertion plates cut into teeth by slits; the teeth sharply sculptured or "pectinated" outside by fine vertical grooves.
- B. Valves lacking eyes.
- C. Girdle scaly .. .. . *Chiton.*
- CC. Girdle leathery, with short bristles .. .. . *Eudoxochiton.*
- BB. Valves having eyes; posterior valve not deeply sinused behind, its insertion plate developed. Girdle covered with calcareous spines or spinelets .. .. . *Acanthopleura.*
- BBB. Valves having eyes upon the lateral areas and head-valve. Insertion plate of tail-valve reduced to a smooth ledge or ridge, having no posterior sinus. Girdle leathery, microscopically velvety .. .. . *Onithochiton.*

Genus *Lepidopleurus*, Risso (1826).

*L. inquinatus*, Reeve.

Pilsbry, Man. Conch. (1), vol. xiv., p. 90, pl. xviii., figs. 49, 50.

Genus *Callochiton*, Gray (1847).

KEY TO SPECIES.

- A. Entire surface delicately shagreened .. .. . *C. platessa.*
- B. Central areas with elevated separate threads, parallel to jugum .. .. . *C. illuminatus.*
- C. A row of deep longitudinal pits in front of lateral areas .. .. . *C. empleurus.*

*C. platessa*, Gould.

Pilsbry, Man. Conch. (1), vol. xiv., p. 49, pl. xi., figs. 1-5.

*Crocinus*, Reeve, and *versicolor*, A. Ad., are synonyms.

*C. illuminatus*, Reeve.

Pilsbry, Man. Conch. (1), vol. xiv., p. 51, pl. ix., figs. 92-94.

*C. empleurus*, Hutton.

Man. N.Z. Moll., p. 113.

Genus *Ischnochiton*, Gray (1847).

KEY TO SPECIES.

- Scales of girdle faintly striated, mingled with non-striated scales .. .. . *I. longicymba.*
- All scales of girdle deeply grooved, 3-4 grooves on a scale .. .. . *I. parkeri.*

*I. longicymba*, Quoy and Gaimard.

Man. N.Z. Moll., p. 113.

*I. parkeri*, Suter.

Proc. Mal. Soc. London, vol. ii., p. 186 (1897).

*Circumvallatus*, Hutton (not of Reeve), is a synonym.

### Genus *Plaxiphora*, Gray (1847).

#### KEY TO SPECIES.

- A. Valves exposed.
- B. Posterior valve not greatly reduced in size or altered in form.
- C. Central areas unsculptured save for growth-lines.
- D. Sutural pores or tufts distinctly developed.
- E. Lateral areas with subobsolete radiating riblets .. .. . *P. superba*.
- EE. Lateral areas with at least 2 distinct radiate ribs .. .. . *P. subatrata*.
- DD. Sutural pores absent, girdle densely covered with bristles .. .. . *P. suteri*.
- CC. Central areas sculptured, at least at the sides.
- D. Large. Sutural pores with bifurcating bristles; girdle broad, reddish .. .. . *P. biramosa*.
- DD. Small. Sutural pores with more than 2 bristles; girdle narrow, white or white and black .. .. . *P. cælata*.
- BB. Posterior valve reduced to a narrow crescentic form, strongly arched upward .. .. . *P. ovata*.
- AA. Valves partially immersed in the girdle, which encroaches at the sutures .. .. . *P. obtecta*.

*P. biramosa*, Quoy and Gaimard.

Man. N.Z. Moll., p. 116.

*P. superba* (Cpr.), Pilsbry.

Pilsbry, Man. Conch. (1), vol. xiv., p. 319, pl. lxxviii., figs. 55-61.

*P. cælata*, Reeve.

Man. N.Z. Moll., pp. 115, 116.

*Ziczac*, Hutton, and *terminalis*, E. A. Smith, are synonyms.

*P. suteri*, Pilsbry.

Nautilus, vol. viii. (1894), p. 8.

*Ciliata*, Hutton (not of Sowerby), is a synonym: Man. N.Z. Moll., p. 116.

*P. subatrata*, Pilsbry.

Proc. Mal. Soc. London, vol. ii., p. 190 (1897).

*Atrata*, Hutton (not of Sowerby), is a synonym: Man. N.Z. Moll., p. 114.

*P. obtecta* (Cpr.), Pilsbry.

Pilsbry, Man. Conch. (1), vol. xiv., p. 330.

*P. ovata*, Hutton.  
Man. N.Z. Moll., p. 117.

Genus **Spongiochiton**, Carpenter (1873).

*S. productus* (Cpr.), Pilsbry.  
Pilsbry, Man. Conch. (1), vol. xiv., p. 26.

Genus **Acanthochites**, Risso (1826).

KEY TO SPECIES.

- A. Anterior valve without radiating ribs; not obviously lobed around the lower edge of tegmentum.  
 B. Tail valve with one slit on each side; girdle covered with spicules, and having well-developed tufts .. .. *A. zelandicus*.  
 BB. Tail valve with several slits; girdle naked, leathery, covering the valves except for a linear band at the ridge; small tufts on tubercles .. .. *A. porosus*.  
 AA. Anterior valve having 5 radiating ribs, its lower margin 5-lobed. Girdle with 18 small pore-tufts.  
 B. Girdle leathery, naked except tufts .. .. *A. violaceus*.  
 BB. Girdle covered with white spicules, especially at the margin .. .. *A. rubiginosus*.

*A. zelandicus*, Quoy and Gaimard.

Man. N.Z. Moll., p. 117.

*Hookeri*, Gray, is a synonym.

*A. porosus*, Burrow.

Man. N.Z. Moll., p. 118.

*Leachi*, Blainville; *monticularis*, Q. and G.; *zelandicus*, Gray; (?) *depressus*, Blaine; (?) *stewartianus*, Rocheb., are synonyms.

*A. violaceus*, Quoy and Gaimard.

Man. N.Z. Moll., pp. 117, 118.

*Porphyreticus*, Reeve, is a synonym.

*A. rubiginosus*, Hutton.

Man. N.Z. Moll., p. 114.

*Costatus*, Suter (not of Ad. and Ang.), is a synonym.

Genus **Chiton**, Linné (1758).

KEY TO SPECIES.

- A. Central areas having longitudinal riblets.  
 B. Sides and ridge of central areas both sculptured.  
 C. Lateral areas with numerous slightly crenulated threads.  
 D. Intermediate valves carinated, divergence 120° .. .. *C. quoyi*.  
 CC. Lateral areas with 3 or 4 rows of distinct tubercles .. .. *C. pellis-serpentis*.  
 BB. Central areas with a smooth band or triangle on ridge of each valve.

- C. Lateral areas with 4-6, pleura 16 or more, granose riblets .. .. *C. canaliculatus.*  
 CC. Lateral areas with 4-8 divaricate riblets, pleura 20 furrows on each side .. .. *C. æreus.*  
 CCC. Lateral areas with 2-4, pleura 8-14, nodulose riblets.  
     D. Girdle-scales mucronated .. .. *C. limans.*  
     DD. Girdle-scales not mucronated .. .. *C. stangeri.*  
 AA. Central areas smooth, no longitudinal ribs .. .. *C. sinclairi.*
- C. quoyi*, Deshayes.  
 Man. N.Z. Moll., p. 112.  
*Viridis*, Q. and G., and *glaucus*, Gray, are synonyms.
- C. æreus*, Reeve.  
 Man. N.Z. Moll., p. 112. (N. Zeal.?)
- C. pellis-serpentis*, Quoy and Gaimard.  
 Man. N.Z. Moll., p. 111.
- C. sinclairi*, Gray.  
 Man. N.Z. Moll., p. 111.
- C. canaliculatus*, Quoy and Gaimard.  
 Man. N.Z. Moll., p. 112.  
*Stangeri*, Pilsbry (not of Reeve), and *insculptus*, A. Ad., are synonyms.
- C. stangeri*, Reeve.  
 Man. N.Z. Moll., p. 111.
- C. limans*, Sykes.  
 Pilsbry, Man. Conch. (1), vol. xiv., p. 175, pl. xxxvii., figs. 12, 13.  
*Muricatus*, A. Adams, and *sulcatus*, Hutton (not of Q. and G.), are synonyms.

Genus *Eudoxochiton*, Shuttleworth (1853).

KEY TO SPECIES.

- A. Shell elevated, divergence 100-110°, anterior valve with 30 slits, spinelets black .. .. *E. nobilis.*  
 AA. Shell depressed, divergence 135-140°, anterior valve with 17 slits, spinelets brown .. .. *E. huttoni.*
- E. nobilis*, Gray.  
 Man. N.Z. Moll., p. 115.
- E. huttoni*, Pilsbry.  
 Pilsbry, Man. Conch. (1), vol. xiv., p. 194, pl. xlvi., figs. 96-100.

Genus *Acanthopleura*, Guilding (1829).

- A. granulata*, Gmelin.  
 Trans. N.Z. Inst., vol. iv., p. 180. Suter, Proc. Mal. Soc. London, vol. ii., p. 198.  
*Corticata*, Hutton, is a synonym.

Genus **Onithochiton**, Gray (1847).

*O. undulatus*, Guoy and Gaimard.

Man. N.Z. Moll., p. 114.

*Lineolata*, Hutton (not of Frembly), is a synonym.

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ART. VII.—*Revision of the New Zealand Pleurotomidæ,  
with Descriptions of Six New Species.*

By HENRY SUTER.

[Read before the Philosophical Institute of Canterbury, 2nd November,  
1898.]

Plate III.

THE diagnosis of the family is given by Tryon\* as follows: "Shell fusiform, with a more or less produced anterior canal, and a slit or sinus of the outer margin of the aperture near the suture. Operculum (not always present) corneous, annular, the nucleus apical, or subcentral, or nearly marginal. The dentition is usually 1—0—1, but in some groups there is a rhachidian tooth, and in others there are two laterals. No jaws."

With regard to making a satisfactory classification, it may not be out of place to quote a few of Tryon's remarks on the subject†: "In no other group of Mollusca is it so difficult to make a satisfactory classification. Many species are very variable in their characters, whilst the material for the recognition of most of those described is generally scanty. The many generic and subgeneric groups that have been made only increase the confusion, for so great is the variability of all the characters that nearly allied species have been constantly separated into different groups."

As the dentition and operculum of most of the New Zealand species are unknown, the present classification rests on the characters of the shells alone, and is therefore open to amendment.

The deep-sea species hardly form part of the New Zealand fauna, but I include them here, as some of them may be found inhabiting our shores in lesser depths.

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\* Tryon, Man. Conch. (1), vol. vi., p. 151.

† *l.c.*, pp. 151, 152.